

In the Claims

1. (Currently Amended) [A] In a method for converting a crude starting material comprising benzene and other aromatic hydrocarbons to useful C7 and C8 aromatic hydrocarbons, [which] the method which comprises contacting a crude starting material comprising aromatic hydrocarbons, wherein said aromatic hydrocarbons comprise from 5 to 80% by weight of benzene and other aromatic hydrocarbons, and a non-aromatic compound content of [1% by weight or less] more than 10% by weight, the steps which comprise:

(A) lowering the content of said non-aromatic compounds to produce a refined starting material having a non-aromatic compound content having a value of 1% by weight or less, and

(B) reacting said refined starting material in the presence of, with] hydrogen and a catalyst containing mordenite and between about [0.01 to 5] 0.02 to 2% by weight rhenium to [perform at least one reaction selected from the group consisting of transalkylation, dealkylation and disproportionation, thereby diminishing] diminish the benzene content of said refined starting material and [converting] to convert at least a portion of said refined starting material into C7 or C8 aromatic hydrocarbons[; wherein hydrogen is present in said reaction].

2. (Cancelled)

3. (Currently amended) The method for converting aromatic hydrocarbons as claimed in any one of claims 1 and 2, wherein said aromatic hydrocarbon conversion reaction is transalkylation reducing benzene content and C9 content to increase the contents of xylene and toluene in the product.

4. (Previously cancelled)

5. (Currently amended) The method for converting aromatic hydrocarbons as claimed in claim 1 [or 2], wherein the starting material contains C9+ alkyl-aromatic hydrocarbons.

6. (Previously amended) The method for converting aromatic hydrocarbons as claimed in claim 5, wherein said benzene and said C9+ aromatic hydrocarbons in the starting material are reduced and C7 and C8 aromatic hydrocarbons in the product are produced.

7. (Cancelled)

8. (Cancelled)

9. (Previously cancelled)

10. (Currently amended) A method for producing C7 and C8 aromatic hydrocarbons, which comprises mixing a fraction obtained through gasoline fractionation comprising benzene, with an aromatic hydrocarbon material that contains C9+ aromatic hydrocarbons to create a mixture having a non-aromatic compound content greater than 1% by weight, refining the mixture by [reducing] decreasing said non-aromatic compound content of said mixture to 1% by weight or less, then reacting the refined mixture with a catalyst containing mordenite and between 0.01 to 5% by weight rhenium to thereby diminish benzene content and convert the aromatic hydrocarbons therein, and separating the resulting C7 and C8 aromatic hydrocarbons from the reaction mixture.

11. (New) The method defined in claim 1, wherein the starting hydrocarbon material has a toluene or xylene content that is lower than the equilibrium composition of toluene and/or xylene in said starting material.

12. (New) The method defined in claim 1, wherein said benzene-containing hydrocarbon material and said catalyst in the presence of which said contact takes place has a reaction pressure of 0.1 - 100 MPa and is at a temperature of 200 - 650°C.

13. (New) The method defined in claim 1, wherein hydrogen is present in contact with said starting hydrocarbon material and said catalyst, and wherein said hydrogen has a flow rate of 0.1 and 20 mol/mol in terms of hydrogen/starting material.

14. (New) The method defined in claim 1, wherein the content of said non-aromatic compound in said starting material is 0.5% by weight or less.

15. (New) The method defined in claim 1, wherein the content of said non-aromatic compound in said starting material is 0.1% by weight or less.

16. (New) The method defined in claim 1, wherein said non-aromatic compounds are removed by distillation prior to contacting said starting material with said catalyst.